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Contribution to the Myxogasters of Maine.—II.

By F. L. Harvey.

The excessive rainfall in Maine during the season of 1896 made the conditions most favorable for the growth of all kinds of fungi. We have never before seen such magnificent specimens of fleshy fungi, nor such fine myxogasters. The favorable season, together with more careful research, made by Mr. E. D. Merrill, a member of the Junior Class at the Maine State College, and myself, has brought to light nearly thirty species not before reported from the State. Quite a number of these are rare in the United States and a few new to this country. They are recorded below. Appended is a list of new localities by numbers, which refer to a former list (Bulletin, Aug., 1896) and to the numbers of this. Our specimens have been carefully determined with the compound microscope and the results confirmed by Mr. A. P. Morgan, who has kindly examined all the species offering any difficulties. Notes upon some of the species reported in a former list will be found in their proper places in the text. Some there mentioned will have to be combined as synonyms, while some included doubtfully have been confirmed. Mr. Merrill's specimens were collected on the shores of Lake Auburn, where, in a week, he obtained over forty species.

Ord. Physaraceae.

87. *Cytidium globuliferum* Bull. Orono, Aug., 1896. On fallen trunks. (Harvey.) E. Auburn, Nov., 1896. (E. D. Merrill.) On fallen hemlock. The sporanges of Mr. Merrill's specimens were rather small for the species, but otherwise characteristic.

88. *Cytidium rufipes* A. & S. Orono, Oct., 1896. (Harvey.) Nov., 1896, E. Auburn. (Merrill.) Specimens scanty on fallen, decaying leaves. The above includes *P. aurantium rufipes* A. &. S.

89. *Craterium minutum* Leers. = *C. pedunculatum* Trentepohl. On decaying leaves. Orono, Sept., 1896. (Merrill.) Oct., 1896. (Harvey.) E. Auburn. Nov., 1896. (Merrill.)

90. *Physarum cupripes* B. & R. Orono, Sept., 1896. (Harvey.) Mr. Morgan says of our specimens. "Fine! Capillitium with much lime."

91. *P. connexum* Link. Greenfield, Sept., 1896. (Harvey.) Abundant on dead wood and bark. Included by Lister in *P. compressum* Alb. & Schw. Our specimens answer to *P. affine* Rost. nearly.

92. *P. imitans* Racib. Orono, Oct., 1896. (Harvey.) On moss associated with *Arcyria* and *Diderma*, scanty. A small species with sporanges .5 mm. diameter and liable to be overlooked. Mr. Morgan says of a specimen sent him "its large sharp pointed nodules are apparent even under a ¾-in. objective."

93. *P. ornatum* Peck. Greenfield, Sept., 1896. (Harvey.) On dead wood. Morgan says "this is a fine species and yours is an elegant specimen."

94. *Physarum diderma* Rost. Orono, Oct., 1896. (Harvey.) Mr. Morgan made the following note on a specimen sent him: "This is exactly like my specimens, which I refer to *P. diderma* Rost. I have found it only twice and distributed it to Rex, McBride and Sturgis who agree with me. I do not regard it as *P. diderma* Lister." This is a rare species heretofore only collected by Mr. Morgan and only twice by him. To find it in Maine is interesting.

95. *P. striatum* Fr. Western Sisters' Is., Penobscot Bay, Aug., 1896. (Harvey.) We sent Mr. Morgan a specimen and he says "It is referable to the above species. I have the yellow form also, which is *P. aurantium* Pers. From what little material I have, I am inclined to think the two may stand for a good species." Both have disappeared from Rostafinski's monograph and from Lister's work.

96. *Fuligo candida* Pers. Head of Pamedomcook Lake, Oct., 1895. (Harvey.) Two specimens taken, which were referred to Mr. Morgan who makes the following note: "I never saw anything like it. It is not *Fuligo cinera* Schw. The spores are oval to oblong, minutely warted, 10–11 x 9–10 mic. and the lime nodules are different. The specimens are good ripe ones showing the internal structure nicely. We will call it *F. candida* Pers. The cortex is whitish, fragile, and soon breaking into small patches. This form is included under *Fuligo septica* Link (Gruel) by Saccardo, but is very different. Persoon's species should be restored.

96a. *Fuligo muscorum* A. & S. Eastport. Prof. W. G. Farlow. Omitted from our former list.

97. *Badhamia verna* Rost. Orono. Me. Oct., 1896. (Harvey.) This is an exceeding rare species. It = *Physarum vernum* Sommerfeldt sent by him to Fries in litt. (See Fries S. M. 3: 146.) Rostafinski cites but one other specimen, found at Freiberg by De Bary. To find it in this country is remarkable. Lister merges it with *B. panicea* Rost., but wherever placed the species is new to this country. The sessile sporanges are hard to detect on the mossy logs where it grows. We have never found it but once, and then in very small quantity. Mr. Morgan, to whom a specimen was sent, thinks "it is just as near as can be to the specimen described by Fries."

98. *Badhamia capsulifera* Bull. Orono, Oct., 1896. (O. W. Knight.) Lister puts this under *B. hyalina* Berk. He says that the spores are like those of *B. hyalina* Berk. The plasmodium from which our specimens come was very large and at one end the sporanges were finely obovate and at the other end globose and some of the sporanges were lobed. Some were long stalked and others sessile. The large plasmodium would suggest *B. utricularis* Berk. if that is a distinction between *B. hyalina* Berk. and *B. utricularis* Berk. Our specimens were regarded as the above species by Mr. Morgan, who includes in his description (M. M. V., p. 106) *B. hyalina* Rost. We incline to Massee's view *a polymorphous species* for the above and *B. utricularis* Bull.

99. *Scyphium rubiginosum* Chev. Orono, Oct., 1896. (Merrill.) Nov., 1895. (Harvey.) Mr. Merrill's specimens were found on moss, sticks and on the base of alders near a brook. My specimens were found on the base of a fir tree in deep woods. Not abundant.

ORD. DIDYMIACEAE.

100. *Lepidoderma tigrinum* Schr. Orono, Oct., 1896. (Harvey.) Only a few scattered sporanges found amongst moss on the underside of a declining trunk, two feet from the ground. *A rare species.* Mr. Morgan says it is scanty in Ohio.

101. *Diderma radiatum* Morgan = *Chondrioderma radiatum* Rost. Orono, Oct., 1896. (Harvey.) Scanty specimens were found amongst lichens on hemlock bark. Mr. Merrill found this species much more abundant at E. Auburn, showing finely the radiate structure

of the ruptured sporanges and the columella. The outer peridium breaks up in patches and the sporanges were hard to detect, resembling the scaly growth of a young *Parmelia.* This is a rare species in this country but promises to be abundant in Maine.

102. *D. spumarioides* Fr. E. Auburn, Nov., 1896. (Merrill.) A single plasmodium found on decaying leaves. A species with small subglobose sessile contiguous sporanges, whitened by a coating of lime. Rare in Maine.

103. *Spumaria alba* Bull. Head of Pamedomcook Lake, October, 1895. (Harvey.) Growing on moss. Two specimens taken, Orono, October, 1896, and E. Auburn, Nov., 1896. (Merrill.) On sticks and grass. Specimens taken by Mr. Merrill at Orono were infested by the rare fungus *Hypomyces candicans* Plow., which has never before been recorded from this country, and by nobody abroad except Plowright. He found it on a Myxogaster, but did not know the species. Our specimens have well developed asci. The form described by Mr. Ellis as *Nectria Rexiana* (Ell.), and found by Dr. Rex on *Chondrioderma spumarioides,* is the young of the same thing. We sent Mr. Ellis a specimen and he said it was the same as his *Nectria Rexiana* Ell.

104. *Didymium lobatum* Nees, Greenfield, Oct., 1896. (Harvey). This form is included by Rostafinski under *D. farinaceum* Schrad. It may be distinct.

ORD. STEMONITACEAE.

Remarks: Comatriche crypta Schw. Greenfield, Aug., 1896. (Harvey.) Nov., 1896. E.Auburn. (Merrill.) Mr. Morgan said of our Greenville specimens that they were well grown and typical. The form which Dr. Rex described as *C. irregularis,* and which Lister makes a variety of Peck's *C. longa* is only a ragged, poorly developed state of *C. crypta.* We find. this and the type in the same plasmodium. Abundant in Maine, forming plasmodia several inches across. This is no. 38 of a former list.

Comatriche nigra Pers. Greenfield, Aug., 1896. (Harvey). A few scattered sporanges on decaying wood. Reported in a previous list (no. 57) as *C. obtusata* Preuss. Lister includes the above, together with another form which we find at Orono that was described as *C. Suksdorfii* by Ellis in his *C. obtusata* Preuss. The latter may prove a distinct species.

105. *Lamprodrma scintillans* B. & Br. E. Auburn, Nov., 1896 (Merrill.) A small cluster of sporanges on decaying wood.

106. *Clastoderma DeBaryanum,* Blytt. Orono, Oct., 1896. (Harvey.) A few scattered sporanges on rotten wood. A small species easily overlooked.

ORD. RETICULARIACEAE.

107. *Reticularia splendens* Morgan. Oldtown, Greenfield, Orono. (Harvey.) E. Auburn. (Merrill.) This was reported as *Enteridium Rozeanum.* (No. 53 of former list.) We have sent specimens to Mr. Morgan, who pronounces them his *R. splendens.* He insists that his species is distinct from European specimens called *E. Rozeanum.*

108. *R. umbrina* Fr. = *R. Lycoperdon* Bull. Oldtown, Greenfield, Orono. (Harvey.) E. Auburn. (Merrill.)

Mr. Morgan thinks *R. atra* Fr. (No. 43 of former list) = *R. umbrina* Fr.

ORD. LICEACEAE.

Remarks: Licea minima Fr., Orono, Oct., 1896. (Harvey.) This species was reported in a previous list (No. 50) from crushed specimens in the Blake Herb. collected by Blake. The rediscovery establishes this form as a Maine species. It is rare. Mr. Morgan wrote us he had never seen the species before, but that it agreed exactly with Fries' description. The spores are 11–13 μ. *Licea fragiformis* (Bull.) Nees. Orono. Oct., 1896. (Harvey.) This may prove to be distinct from *Tubulina cylindrica* Bull., with which it is merged by Lister.

109. *Lycogala flavofuscum* Ehr. Brunswick, 1896. (Kate Furbish.) A single specimen among some fungi sent for determination. Habitat not known.

ORD. TRICHIACEAE.

110. *Trichia fragilis* Sow. E. Auburn., Nov., 1896. (Merrill.) This was growing with *Hemiarcyria rubiformis* Pers., which it resembles somewhat in color.

Remarks: Morgan puts *T. Jackii* and *T. affinis* DeB. (Nos. 58 and 65) of our former list together. He says of our specimens: "They are genuine *T. Jackii* Rost., if you want to take spore sculpture for species."

Regarding specimens of *Hemiarcyria* sent Mr. Morgan he says "your specimen is genuine *H. clavata* Pers. and the only one I ever saw." This species seems to be common in Maine.

ORD. ARCYRIACEAE.

111. *Heterotrichia Gabriellae* Massee. E. Auburn, Nov., 1896 (Merrill). Growing on wood. The only specimens before reported are from South Carolina. Morgan says of our specimens that they are all right both for genus and species and that it is a remarkable species. We are unable to see how Lister can unite this to *Arcyria ferruginea*, which is a common species in Maine and very unlike the above in habit and structure.

112. *Arcyria pomiformis* Rost. = *A. ochroleuca* Fr. = *A. lutea* Schw. Orono, 1890. (Harvey.) Mr. Morgan says "this is a good species, wholly distinct from *A. cinerea* Pers., with which Lister merges it. I always get it in like your sample with only a few sporangia to the specimen. I have had it only from S. Carolina before. It is a minute species and is certainly extremely rare in America." It is not common in Maine.

Remarks: Of a specimen of *Arcyria* we sent Mr. Morgan he says "it is exactly *A. aurantiaca* Raunkier. I have his work with this species elaborately illustrated and it agrees exactly. The calyculus of your specimen is minutely warted, not reticulate. The sculpture of the thread is finer than in *A. ferruginea.*"

113. *Lachnobolus incarnatus* A. & S. Orono and Greenfield. (Harvey.) Our specimens agree with what Prof. McBride described as the above species. Lister merges it with *L. circinans* Fr. Our form is probably a distinct American species, deserving a new name.

ORD. PERICHAENIACEAE.

114. *Perichaena microcarpa* Schroeter. Orono, Oct., 1896. (Harvey.) Only a single specimen found which was sent to Mr. Morgan, who says it puzzles him exceedingly, but he thinks it nearest to the above. He makes the following notes: "Spores 14–17 mic., strongly spinose, but the color is yellow-brown; threads not yellow, but hyaline. I cannot discover lime anywhere; the wall is yellow, or when more thickened, yellow-brown. Evidently rare and new to the country."

115. *P. marginata* Schw., Orono, etc. (Harvey.) E. Auburn, Nov., 1896. (Merrill.) The specimens a little weathered, but the internal characters all right. Not abundant. We have seen this at several localities, but thought it the young of some other Myxogaster until this season.

NEW LOCALITIES FOR MAINE MYXOGASTERS.

The numbers refer to a previous list (BULLETIN, Aug., 1896), and to the numbers of this article.

Eastport: Prof. W. G. Farlow, Bull. Bussey Ins. 1876, p. 430. Nos. 40, 47, 96a.

Brunswick: Kate Furbish, No. 109.

Western Sisters' Island, Penobscot Bay, near Mt. Desert, Long Island: F. L. Harvey, Nos. 19, 26, 34, 35, 76, 81, 95.

Head of Pamedomcook Lake: F. L. Harvey, 96, 103.

Orono: O. W. Knight, No. 98; E. D. Merrill, Nos. 48, 89, 99, 102, 103; F. L. Harvey, Nos. 50, 87, 88, 89, 90, 92, 94, 97, 99, 100, 101, 106, 107, 108, 112, 113, 114.

Greenfield: F. L. Harvey, Nos. 37, 38, 91, 93, 108, 113.

E. Auburn: E. D. Merrill, Nos. 1, 10, 13, 14, 17, 18, 19, 26, 32, 34, 38, 42, 47, 52, 54, 55, 57, 58, 59, 61, 62, 65, 68, 69, 73, 75, 81, 82, 86, 87, 88, 89, 99, 101, 102, 103, 105, 107, 108, 110, 111, 115.

Contribution to the Gasteromycetes of Maine.

BY F. L. HARVEY.

This list embraces all the gasteromycetes known by the writer to have been collected in Maine.

It includes all the species referred to in the literature at hand, besides the species found in the collections of the Portland Society of Natural History and the Blake Herbarium of the Maine State College. The species detected by the writer and his pupils are also included. No special efforts have been made to do exhaustive collecting, and the list may be regarded as preliminary. Correspondence with parties interested in Maine Cryptogams is solicited, and additional references to Maine species of the above order will be gratefully received and credited.